

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1-16. (Canceled)

17. (Previously Presented) A method for enabling access between operating system kernel space and a network interface controller (NIC) as well as between user space and said NIC, wherein the method is performed by a kernel-space device driver and a user-space device driver, said method comprising the steps of:

enabling access between kernel space and user space via a kernel-space-user-space interface;

enabling direct access between user space and said NIC via a user-space-NIC interface;

interconnecting said kernel-space-user-space interface and said user-space-NIC interface to enable user-space tunneled access between kernel-space and said NIC;

providing simultaneous user-space and kernel-space access to a network layer over a single NIC port;

in a first operational mode of the kernel-space device driver, directly accessing the NIC from the kernel-space device driver via a kernel-space-NIC interface; and

in a second operational mode of the kernel-space device driver, accessing the NIC via the interconnected kernel-space-user-space interface and user-space-NIC interface;

wherein the step of enabling direct access between user space and the NIC and the step of interconnecting the kernel-space-user-space interface and the user-space-NIC interface are executed in application context of a user application, and an operating system orders the kernel-space device driver to switch to the first operational mode in response to a user application failure;

wherein the kernel-space device driver switches to the first operational mode if there is no user-space call to the kernel-space device driver for a predetermined period of time.

18. (Previously Presented) The method according to claim 17, wherein said interconnecting step comprises the steps of:

fetching pointer information, pointing to data in a common memory, from a memory buffer associated with one of said kernel-space-user-space interface and said user-space-NIC interface; and

inserting said pointer information into a memory buffer associated with another of said interfaces.

19. (Canceled)

20. (Previously Presented) The method according to claim 17, further comprising, for outbound kernel-level protocol communication, the steps of said kernel-space device driver inserting pointer information, pointing to data in a common memory, into a transmit buffer associated with said kernel-space-user-space interface, and said user-space device driver functionality fetching said pointer information therefrom and inserting it into the transmit buffer associated with said user-space-NIC interface, and said NIC fetching said pointer information from the transmit buffer associated with said user-space-NIC interface and reading corresponding data from said common memory based on the obtained pointer information.

21. (Previously Presented) The method according to claim 17, further comprising, for inbound kernel-level protocol communication, the steps of:

said NIC inserting pointer information, pointing to data in a common memory, into a receive buffer associated with said user-space-NIC interface;

said user-space device driver functionality fetching said pointer information from the receive buffer associated with said user-space-NIC interface and inserting it into the receive buffer associated with said kernel-space-user-space interface; and

said kernel-space device driver fetching said pointer information for transfer to a kernel-level protocol, which reads the corresponding data from said common memory based on the pointer information.

22. (Previously Presented) The method according to claim 17, wherein said step of enabling direct access between user space and said NIC and said interconnecting step are executed in application context of a user application.

23. (Previously Presented) The method according to claim 22, wherein said step of enabling direct access between user space and said NIC and said interconnecting step are performed by user-space device driver functionality implemented as user-space library functionality.

24-29. (Canceled)